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POST OFFICE BOX Y
OAK RIDGE, TENNESSEE

January 8, 1959

Dr. Joshua Lederberg
Department of Genetics (9)
Stanford University
Stanford, California

Dear Josh:

The Japanese butterflies that you sent arrived yesterday and in good shape. Many thanks.

I have recently become aware of the multiple myeloma literature, and it has struck me that this might be an ideal way of producing clones of antibody producing cells. I was especially pleased to learn that Mike Potter has a plasma cell leukemia in the mouse which is identical in nearly every respect with multiple myeloma in man and further that this leukemia has been characterized by McCulloch as having virus-like inclusions. I am currently very excited over the prospects of inducing this leukemia anew with cell-free filtrates in hyperimmune animals and growing up large clones of antibody producing cells which can subsequently be transplanted into nonimmune animals perhaps even into tissue culture where they may continue to produce their characteristic protein, the antibody, I hope. There are a lot of ifs in this approach, but Potter seems amenable to sending me the tumor and so I hope to get under way with the project in the very near future. I have written McCulloch in Toronto asking him what success he has had with inducing the tumor with cell-free extracts, since he mentions having tried this in a recent paper in Nature, but so far I have had no reply.

I have made a preliminary attempt on 2^4 animals to use your suggestion of irradiating and giving only a small dose of isologous marrow. We gave 1050 r and 10^5 isologous bone marrow cells. At about day 40 there are only 4 of 2^4 treated animals surviving but I expect these to exhibit a reasonable life span. It seems to me that a dose of cells as small as 10^4 would give essentially no survival and that we are very close to the minimum usable dose. A

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dose of 100,000 cells is probably too large for the purpose that we have in mind; however, I think we will continue to explore this approach a little longer.

I hope you are getting settled in Stanford and enjoying your new surroundings. I will try to keep you in touch with our progress here.

Yours,

A handwritten signature in cursive script, appearing to read "Dan".

D. L. Lindsley
Biology Division

DLL:MW